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(71) Applicant (*for all designated States except US*): SOLEXA LTD. [GB/GB]; 38 Jermyn Street, London SW1Y 6DN (GB).

(72) Inventor; and

(75) Inventor/Applicant (*for US only*): BALASUBRAMANIAN, Shankar [GB/GB]; University of Cambridge, Department of Chemistry, Lensfield Road, Cambridge CB2 1EW (GB).

(74) Agent: GILL JINNINGS & EVERY; Broadgate House, 7 Eldon Street, London EC2M 7LH (GB).

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(54) Title: POLYNUCLEOTIDE SEQUENCING

(57) Abstract: A method for sequencing polynucleotides involves sequential addition of detectably labelled bases. A labelled base is incorporated by a polymerase onto a nascent strand, and, after detection, the polymerase is induced to replace the terminal labelled base with a corresponding unlabelled base, thereby permitting further sequencing to occur. The exonuclease activity of many polymerase enzymes is used, to remove the terminal base.

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ, BIOSIS, CHEM ABS Data, MEDLINE, EMBASE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.
X	WO 93 21340 A (MEDICAL RES COUNCIL ;BRENNER SYDNEY (GB); ROSENTHAL ANDRE (GB)) 28 October 1993 (1993-10-28) page 9, line 5 -page 10, line 32; claims 1-11	1-8
P,X	WO 99 57321 A (REHA KRANTZ LINDA J ;UNIV ALBERTA (CA); PIZZICONI VINCENT B (US);) 11 November 1999 (1999-11-11) claim 13	1-8
A	EP 0 663 447 A (TANABE SEIYAKU CO ;EIKEN CHEMICAL (JP)) 19 July 1995 (1995-07-19) claims 1-5	1-8

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040. Tx. 31 651 epo nl.
Fax: (+31-70) 340-3016

Authorized officer

Gabriels, J

INTERNATIONAL SEARCH REPORT

Information on patent family members

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PCT/GB 00/03734

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9321340 A	28-10-1993	AT 159766 T AU 4020893 A CA 2133956 A DE 69314951 D DE 69314951 T EP 0640146 A ES 2110604 T JP 7507681 T US 6087095 A	15-11-1997 18-11-1993 28-10-1993 04-12-1997 19-03-1998 01-03-1995 16-02-1998 31-08-1995 11-07-2000
WO 9957321 A	11-11-1999	EP 1082458 A	14-03-2001
EP 0663447 A	19-07-1995	JP 7231799 A US 5849487 A	05-09-1995 15-12-1998